SANYO

SANYO
STEREO RECEIVER
DCX 4000L
SERVICE MANUAL

SPECIFICATIONS DCX4000L (SEV)

POWER AMPLIFIER SECTION

Continuous Power Output:	
Amplifier load at 4 ohms	30W/30W
8 ohms	23W/23W
(1KHz, each channel driven)	
Amplifier load at 4 ohms	25W/25W
8 ohms	22W/22W
(1KHz, both channel driven)	
Power Output in the range of 20 to 20KHz	
Amplifier load at 4 ohms	20W/20W
8 ohms	17W/17W
(Both channel driven)	
Harmonic Distortion:	Less than 0.8% (Continuous Power)
Intermodulation Distortion:	Less than 0.8% (Continuous Power)
Power Bandwidth:	10 to 40KHz (both channel driven)
Frequency Response:	15 to 35KHz ±1dB
Input Sensitivity/Impedance:	
Main Input:	0.5V/50K ohms
Matching Speaker Impedance:	4 to 16 ohms
Damping Factor:	More than 30 (1KHz, 8 ohms)

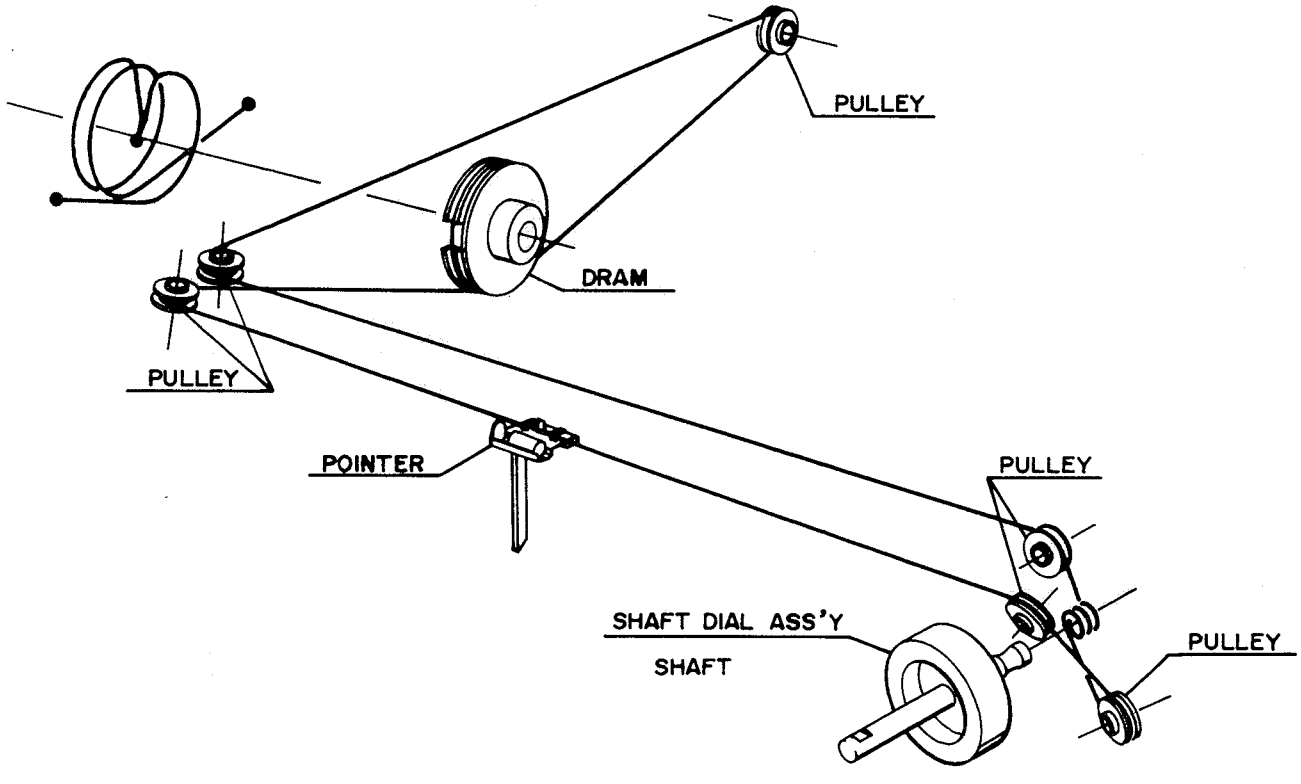
PRE-AMPLIFIER SECTION

Input Sensitivity/Impedance: (1KHZ, at rated power)	
PHONO	: 2.5mV/50K ohms
AUX	: 180mV/50K ohms
TAPE 1, 2	: 180mV/50K ohms
MIC	: 2.5mV/50K ohms
Signal to Noise:	
PHONO (IHF, B network)	More than 75 dB
MIC (IHF, B network)	More than 75 dB
AUX	More than 80 dB
TAPE (IHF, B network)	More than 80 dB
Output Level/Impedance:	
TAPE REC 1, 2	: 180mV/1K ohms
TAPE REC DIN	: 35mV/35K ohms Terminate
PRE-AMP OUT	: 0.6%
Harmonic Distortion: (At nominal Output Level)	
Frequency Response:	
PHONO	RIAA S. T. D. equalization
TAPE/AUX	15 to 45KHz ±0.5dB
MIC	10 to 10KHz +0, -1dB
Tone Control:	
Bass Control:	100Hz, ±10dB
Treble Control:	10KHz, ±10dB
Filter Control:	
High Filter:	10KHz (-6dB/oct.)
Low Filter:	100Hz (-6dB/oct.)
Loudness Control:	100Hz, +10dB
(Power output level at −30dB)	10KHz, +6dB

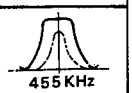
MISCELLANEOUS

Power Requirements:	110V/220V 50Hz (SWITCHABLE)
Dimensions (overall):	
Width	455 mm
Height	148 mm
Depth	340 mm
Weight: (Approx.)	Without Package 9.3 Kg

DIAL CORD STRING



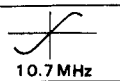
AM ADJUSTMENT

Step	Adjusting Circuit	Connections		SG. frequency	Position of tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output				
1	IF	Connect sweep generator to VC4.	Connect oscilloscope to test point TP7.	455 KHz	Near max. capacity of VC. at position with no unrequired signa.	AM 1st 9-20970 (Red)	 455 KHz
2	MW	Connect standard loop antenna to output terminals of SG Place reciever 2 feet from loop antenna.	Connect V.T.V.M. to speaker terminals.	600 KHz (400 Hz 30% modulation)	600 KHz	MW OSC 9-20690	Max.
3				1400 KHz (400Hz 30% modulation)	1400 KHz	TC 8	
4	LW			150 KHz (400Hz 30% modulation)	150 KHz	LW OSC 9-20720	Max.
5				350 KHz (400Hz 30% modulation)	350 KHz	TC 7, TC 9	
6	Repeat adjustments.						

PREPARE

1. Variable capacitor completely closed.
2. Set the dial pointer to very left line dial scale.
3. Connect sweep generator. SG, V.T.V.M. and oscilloscope.

FM ADJUSTMENT

Step	Adjusting circuit	Connections		SG frequency	Position of tuning dial	Adjustment	V.T.V.M. Oscilloscope
		Input	Output				
1	IF	Connect sweep generator to test point TP1 through 0.01μF	Connect oscilloscope to test point TP2.	10.7 MHz (none modulation)	Near max. capacity of VC. at position with no unrequired signal.	FM 1st 9-21040 (Violet) 9-21050 (Orange) FM 2nd 9-21080 9-21090 FM 3rd 9-21060 9-21070	10.7 MHz
2	Ratio Det.		Connect oscilloscope to test point TP3.			FM DET 9-20850 (Pink) 9-20860 (Blue)	 10.7 MHz
3	RF	Connect FM SG. to FM aerial terminals.	Connect V.T.V.M. to speaker terminal.	90 MHz (400 Hz, 30% modulation)	90 MHz	FM aerial 9-21090 FM OSC 9-20460 FM RF 9-20330	Max.
4				106 MHz (400 Hz, 30% modulation)	106 MHz	TC1 TC2 TC3	Max.
5	Repeat adjustments.						

PREPARE

1. Variable capacitor completely closed.
2. Set the dial pointer to very left line of dial scale.
3. Connect sweep generator, FM SG, V.T.V.M. and oscilloscope. FM aerial input impedance is 300 ohm.
4. Function switch to "FM"
5. Use a screwdriver with plastic grip for all adjustments.

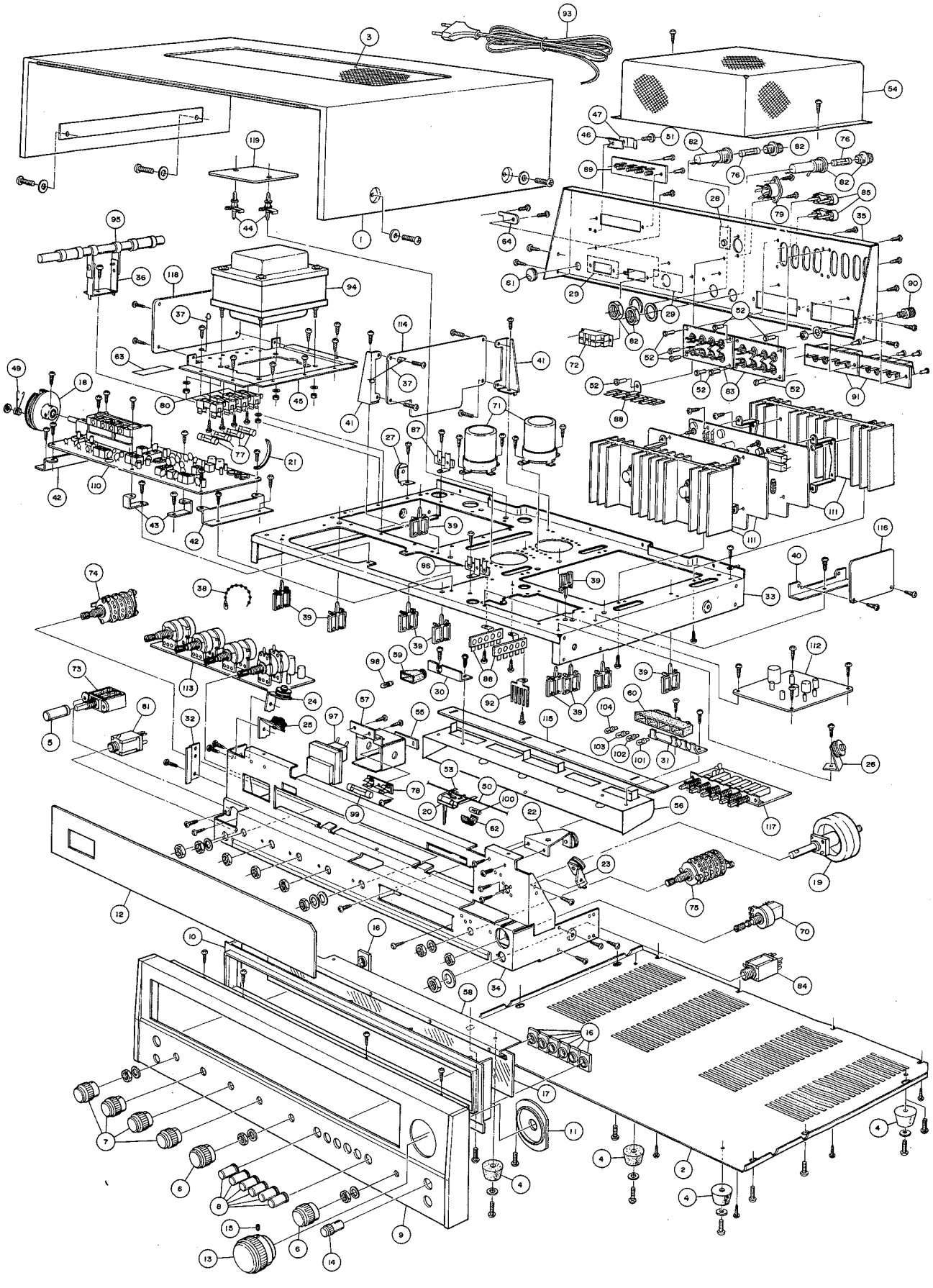
FM MPX ADJUSTMENT

Step	Adjusting circuit	Connections		Position of tuning dial	Adjustment	V.T.V.M.
		Input	Output			
1	SCA signal filter (67 KHz)	Add SCA signal to FM stereo SG. and connect to FM aerial. terminals. FM stereo signal OFF.	Connect V.T.V.M. to test point TP4.	Near max. capacity of VC. at position with no unrequired signal.	67 KHz 9-20142 (Red)	Min.
2	38 KHz	Connect FM stereo SG to FM aerial terminals. 19 KHz signal ON. Main channel, sub channel signal ON. Add 1000 Hz signal from L Ch.	Connect V.T.V.M. to test point TP6.		38 KHz 9-20210 (Black) 9-20222 (White)	Max.
3	FM stereo signal separation		Connect V.T.V.M. to R speaker terminal.			
4		Connect FM stereo SG to FM aerial terminals. 19 KHz signal ON. Main channel, sub channel signal ON. Add 1000 Hz signal from R Ch.	Connect V.T.V.M. to L speaker terminal.		38 KHz 9-20210 (Black)	Min
5	Repeat steps 3 ~ 4. Set at position with max. channel separation.					

PREPARE

1. Variable capacitor completely closed.
2. Connect FM stereo SG. and V.T.V.M.
3. Function switch to "FM AUTO".
4. Use a screwdriver with plastic grip for all adjustments.

EXPLODED VIEW



PARTS LIST

Key No.	Part No.	Description	Q'ty
PACKING			
	4 2449 20230	Aerial FM	1
	131 6 1139 43007	Box, Corrugate exp.	1
	131 6 2119 01361	Bag, Polyethylene exp.	1
	131 6 2719 10600	Bag, Fan	1
	131 6 3009 17640	Pad	2
	131 6 4119 32802	Explanatory Booklet	1
	131 6 4559 10100	Manufacturing No.	1
CABINET			
1	131 2 1101 22501	Cabinet	1
2	131 2 1105 14000	Plate, Bottom	1
3	131 2 1312 11001	Grill	1
4	131 2 1801 13100	Leg, Rubber	4
	131 2 4203 84204	Washer, 4.2 x 14 x 1	4
		Screw, Pan Hd. 4 x 10	6
		Screw, Pan Hd. 4 x 16	4
		Screw, Truss Hd. 4 x 16	4
		Screw, Pan Hd. tapping 3 x 6	4
APPEARANCE			
5	131 0 1001 23300	Knob assy, Power	1
8	131 0 1001 28002	Knob assy, Push	6
6	131 0 1001 23500	Knob assy, Volume, Function	2
7	131 0 1001 23600	Knob assy, SP, Balance, Bass, Treble	4
9	131 0 1016 16203	Panel Decorate assy	1
10	131 2 1116 11700	Frame	1
11	131 2 1116 11800	Frame	1
12	131 2 1201 22802	Plate dial	1
13	131 2 1601 26400	Knob, Tuning	1
14	131 2 1601 26900	Knob, Mic.	1
15	131 2 4201 12400	Screw, Tuning knob	1
16	131 2 6111 12600	Bushing	7
17	131 2 6308 15000	Filter	1
CHASSIS			
18	131 0 3002 10800	Drum assy	1
19	131 0 3003 15400	Shaft dial assy	1
20	131 0 3011 13600	Pointer assy	1
21	131 0 3016 10400	Cramp wire assy	1
22	131 0 3020 02000	Pully assy	1
23	131 0 3020 02100	Pully assy	1
24	131 0 3020 02200	Pully assy	1
25	131 0 3020 02300	Pully assy	1
26	131 0 3020 02400	Pully assy	1
30	131 2 3101 19700	Metal mount, FM stereo ind.	1
31	131 2 3101 19800	Metal mount, Function ind.	1
32	131 2 3101 19900	Metal mount, Plate dial	1
33	131 2 3301 18800	Chassis	1
34	131 2 3305 15900	Panel, Front	1
35	131 2 3306 15703	Panel, Rear	1
36	131 2 3603 12900	Metal mount, Antenna	1
37	131 2 3608 11200	Cramp wire	2
38	131 2 3608 11700	Cramp wire	5
39	131 2 3608 11701	Cramp wire	9
40	131 2 3614 13100	Mount, Mic Amp. P.C.B.	1
41	131 2 3614 13300	Mount, Power P.C.B.	2
42	131 2 3614 15000	Mount, IF P.C.B.	2
43	131 2 3614 15100	Mount, IF P.C.B.	2
44	131 2 3614 16800	Mount RF AMP PCB	2
45	131 2 3617 14100	Metal mount, Trans	1
46	131 2 3621 00400	Metal, Cramp wire	1
47	131 2 3621 00500	Metal, Cramp wire	1
49	131 2 4111 00300	Rope spring	1
50	131 2 4112 10300	Rope	1
52	131 2 4221 00100	Rivet	14
53	131 2 5205 12000	Cushion	1
54	131 2 6103 13000	Cover, Shield	1
55	131 2 6107 13900	Plate sever, Meter lamp holder	1
56	131 2 6110 19800	Shelter light, Dial	1
57	131 2 6110 19900	Shelter light, Tuning meter	1
58	131 2 6110 20000	Shelter light, Frame up	1

Key No.	Part No.	Description	Q'ty
CHASSIS			
59	131 2 6110 20100	Shelter light, FM stereo ind.	1
60	131 2 6110 20200	Shelter light, Function ind.	1
61	131 2 6111 11300	Bushing, Power cord	1
62	131 2 6308 12400	Filter, Pointer lamp	1
27	131 0 3020 05300	Pully Assy	1
28	131 2 1110 12100	Plate decorate	1
29	131 2 1110 16100	Plate decorate	2
51	131 2 4201 12701	Screw	1
63	131 2 7103 20400	Label	1
64	131 2 7104 00101	Plate pad, Switch	1
ELECTRICAL PARTS			
70	4 2229 23490	VR B-10K Mic VR	1
71	4 2239 20333	Electric capacitor C901.902	2
72	4 2319 21530	Switch. 110 - 120V	1
73	4 2319 23090	Switch push, Power	1
74	4 2319 23110	Switch rotary, SP select	1
75	4 2319 23770	Switch,rotary, Function	1
76	4 2349 20030	Fuse 2A, Protector	2
77	4 2349 20540	Fuse 3.15A	4
78	4 2359 20160	Fuse Holder, Meter lamp	1
79	4 2359 20190	Socket 5P DIN	1
80	4 2359 21020	Socekt, Secondary Fuse	4
81	4 2359 21080	Jack Headphone	1
82	4 2359 21110	Fuse holder, Protector	2
83	4 2359 21260	Socket Phono 8P	2
84	4 2359 21670	Jack Mic	1
85	4 2369 20520	Plug connecter, Pre out-main in	2
86	4 2379 20140	Terminal Lug 2P	1
87	4 2379 20250	Terminal 1-1PL	1
88	4 2379 20410	Terminal Lug 1-4PL	3
89	4 2379 21040	Terminal 4P, Antenna	1
90	4 2379 21060	Terminal GND	1
91	4 2379 21210	Terminal SP 4P	2
92	4 2379 21260	Grand Terminal Lug 5P	1
93	4 2439 20521	Power Cord	1
94	4 2519 23250	Power Trans	1
95	4 2579 21002	Antenna coil, LW-MW	1
96	4 2659 20190	Multiplex coil, L901	1
97	4 5119 20340	Meter tuning	1
98	4 6129 20133	Pilot lamp	1
99	4 6129 20280	Pilot lamp, Tuning meter	1
100	4 6129 20360	Pilot lamp, Pointer	1
101	4 6129 20370	Pilot lamp, Aux	1
102	4 6129 20371	Pilot lamp, Phono	1
103	4 6129 20372	Pilot lamp, FM	1
104	4 6129 20383	Pilot lamp, AM	1
		CAPACITORS	
C907		Mylar 0.068μF 50V ±20%	1
C905,906		MP 0.01μF 250V ±20%	2
C903,904		Ceramic 0.047μF 50V +100-0%	2
		RESISTORS	
R906		Carbon 820 ohm ¼W ±10%	1
R905		Carbon 1K ohm ¼W ±10%	1
R904		Carbon 15K ohm ¼W ±10%	1
R901,902		Carbon 47K ohm ¼W ±10%	2
R909,910		Carbon 100K ohm ¼W ±10%	2
R907,908		Carbon 330K ohm ¼W ±10%	2
R911,912		OMF ohm ±10% 1/2W	2

NOTES: 1. Part orders must contain Model Number, Part Number and Description.
2. Unless otherwise noted, component parts indicated by parentheses in the comumn Q'ty are not available.
3. Ordering quantity of screws and/or resistors must be multiple of 10 pcs.

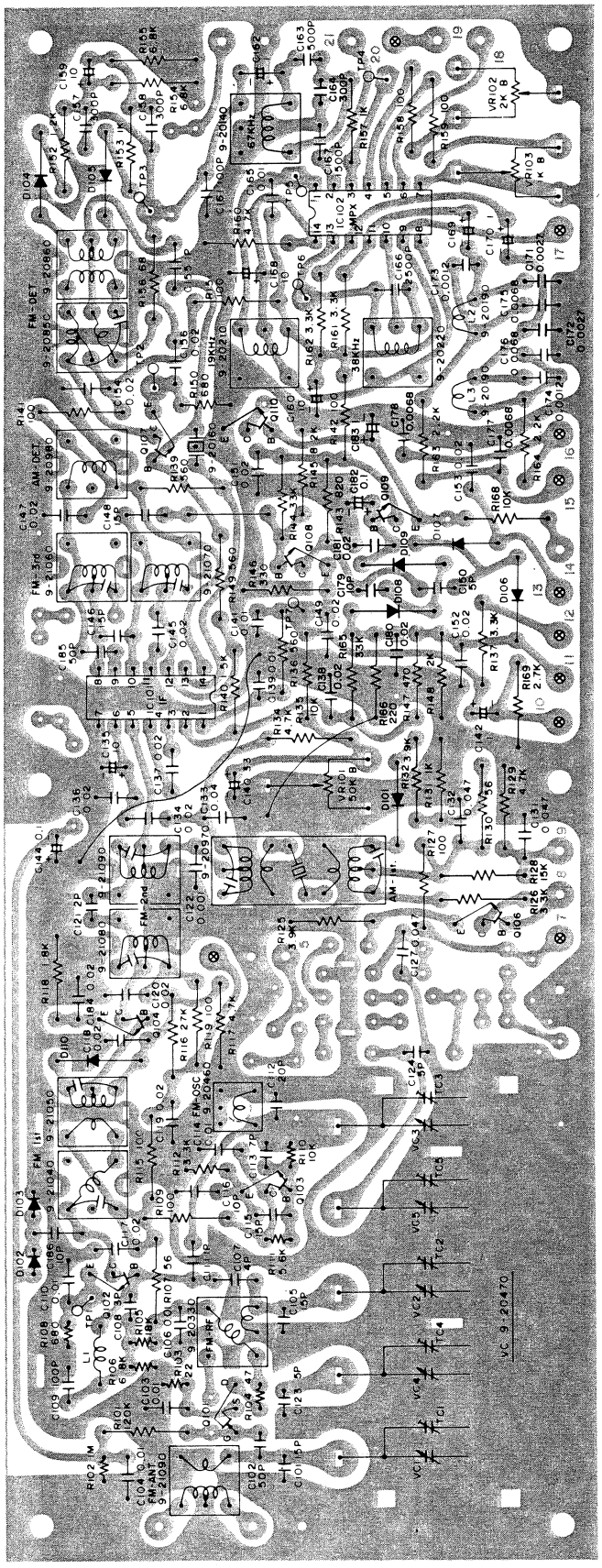
PARTS LIST

Key No.	Part No.	Description	Q'ty
RF. IF. MPX P.C.B. ASSY			
110	131 0 4001 40306	RF, IF, MPX. P.C.B. assy	1
VR103	4 2229 22950	Variable resistor, 1K-B	1
VR101	4 2229 23450	Potensiometer B-50K	1
VR102	4 2229 23580	Variable resistor, 2K-B	1
	4 2249 20490	Variable capacitor	1
	4 2279 20160	Ceramic filter 10.7MHz	1
	4 2379 21120	Terminal, Test point	8
L1	4 2539 20180	IF Trap	1
	4 2569 20850	Voice IF Trans	1
	4 2569 20860	Voice IF Trans	1
	4 2569 20970	IF trans, AM 1st.	1
	4 2569 20980	IF trans, AM 2nd.	1
	4 2569 21040	IF trans, FM 1st.	1
	4 2569 21050	IF trans, FM 1st.	1
	4 2569 21060	IF trans, FM 3rd.	1
	4 2569 21070	IF trans, FM 3rd.	1
	4 2569 21080	IF trans, FM 2nd.	1
	4 2569 21090	IF trans, FM 2nd.	1
	4 2579 21090	Aerial coil, FM	1
	4 2589 20460	OSC coil, FM	1
	4 2599 20330	RF coil, FM	1
	4 2659 20140	Multiplex coil, 67kHz	1
L2,3	4 2659 20190	Multiplex coil	2
	4 2659 20210	Multiplex coil, 19kHz	1
	4 2659 20220	Multiplex coil, 38kHz	1
		SEMICONDUCTORS	
Q102	203 5 4510 66840	Transistor 2SC 668 (N-D-RF) or (N-E-RF)	1
Q109,110	203 5 5100 53740	Transistor 2SC 537 (D) or (E)	2
Q106	203 5 5510 92940	Transistor 2SC 929 (D) or (E)	1
Q104,108	203 5 5510 93040	Transistor 2SC 930 (N-D)	2
Q103,107	203 5 5510 93050	Transistor 2SC 930 (E)	2
Q101	203 5 6500 04160	Transistor 2SK 41 (F)	1
D101,102, 103,104, 105,106, 107,108, 109	202 5 9110 18820	Diode 1S188 (FMI)	9
D110	205 5 9040 44210	Diode DS-442	1
IC101	206 5 0081 20122	IC LA1201 (B-H)	1
IC102	206 5 0663 30010	IC LA3300	1
		CAPACITORS	
C111,155		Ceramic 1PF ±0.25pF 50V	2
C121		Ceramic 2PF ±0.25pF 50V	1
C108		Ceramic 3PF ±0.25pF 50V	1
C107		Ceramic 4PF ±0.25pF 50V	1
C123		Ceramic 5PF ±5% 50V	1
C113		Ceramic 7PF ±0.25pF 50V	1
C150		Ceramic 10PF ±0.25pF 50V	1
C116,186, 179		Ceramic 10PF ±5% 50V	3
C115,146, 148		Ceramic 15PF ±5% 50V	3
C124		Ceramic 5PF ±0.25pF 50V	1
C101,105		Ceramic 15PF ±10% 50V	2
C102,185		Ceramic 50PF ±10% 50V	2
C109,161		Ceramic 100PF ±10% 50V	2
C157,158		Ceramic 300PF ±10% 50V	2
C122		Mylar 0.001μF ±20% 50V	1
C173,174		Mylar 0.0012μF ±20% 50V	2
C171,172		Mylar 0.0027μF ±20% 50V	2
C175,176		Mylar 0.0068μF ±20% 50V	2
C139,141		Mylar 0.01μF ±20% 50V	2
C177,178		Mylar 0.0068μF ±20% 50V	2
C131,132		Mylar 0.047μF ±20% 50V	2
C112		Ceramic 25PF ±5% 50V	1
C183		Electrolytic 1μF 10V	1
C135,159, 160,168		Electrolytic 10μF 10V	4

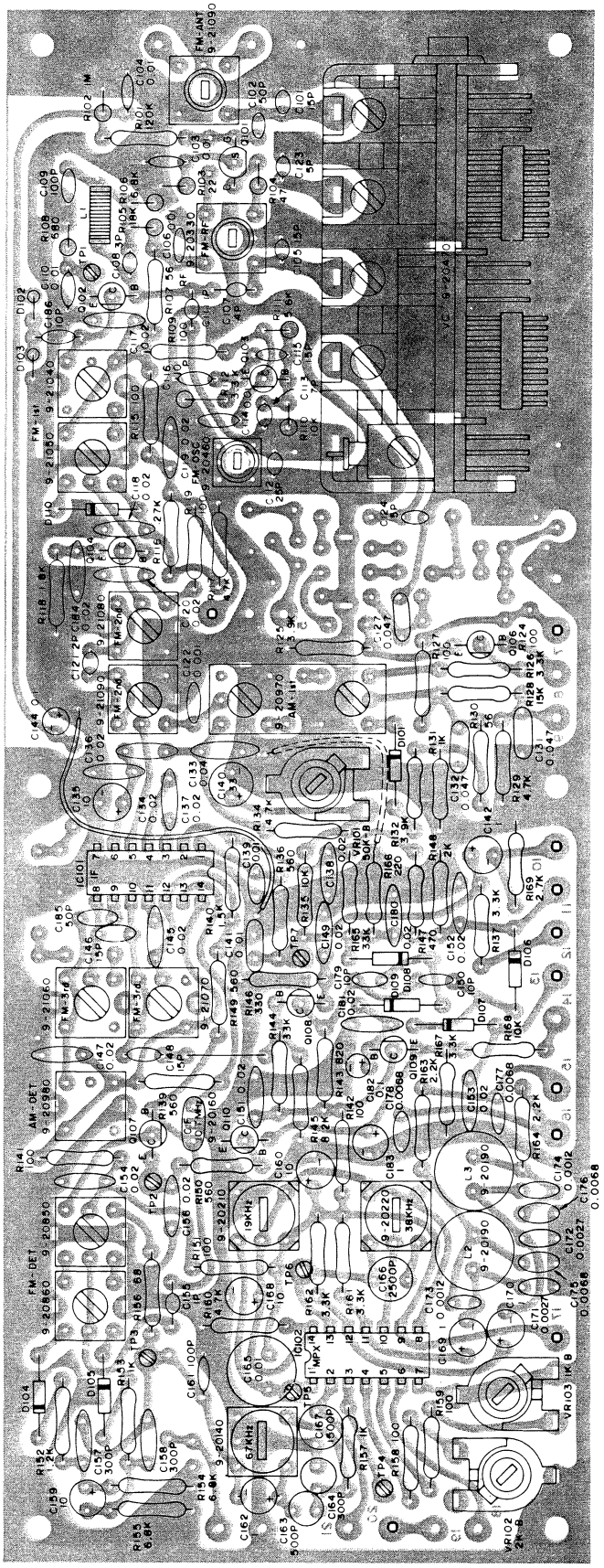
Key No.	Part No.	Description	Q'ty
RF. IF. MPX P.C.B. ASSY			
C140		Electrolytic 33μF 10V	1
C164		Styrol 300PF ±10% 35V	1
C163		Styrol 500PF ±10% 35V	1
C167		Styrol 1500PF ±10% 35V	1
C166		Styrol 2500PF ±10% 35V	1
C165		Styrol 10000PF ±10% 35V	1
C144,182		Alsicon 0.1μF ±20% 10V	2
C142,162, 169,170		Alsicon 1μF ±20% 10V	4
C103,104, 106,110, 114		Ceramic 0.01μF +80 −20% 25V	5
C118,119, 120,117, 134,136, 137,138 151,145, 147,149, 152,153, 154,156, 184,180, 181		Ceramic 0.02μF +80 −20% 25V	19
C133		Ceramic 0.04μF +80 −20% 25V	1
		RESISTORS	
R103		Carbon 22 ohm ±10% 1/4W	1
R104		Carbon 47 ohm ±10% 1/4W	1
R107,130		Carbon 56 ohm ±10% 1/4W	2
R156		Carbon 68 ohm ±10% 1/4W	1
R109,115, 119,127, 141,142, 151,158, 159		Carbon 100 ohm ±10% 1/4W	9
R166		Carbon 220 ohm ±10% 1/4W	1
R146		Carbon 330 ohm ±10% 1/4W	1
R147		Carbon 470 ohm ±10% 1/4W	1
R136,139, 149,150		Carbon 560 ohm ±10% 1/4W	4
R108		Carbon 680 ohm ±10% 1/4W	1
R131,153, 157		Carbon 1K ohm ±10% 1/4W	3
R152		Carbon 1.2K ohm ±10% 1/4W	1
R140		Carbon 1.5K ohm ±10% 1/4W	1
R118,		Carbon 1.8K ohm ±10% 1/4W	1
R148		Carbon 2K ohm ±10% 1/4W	1
R163, 164		Carbon 2.2K ohm ±10% 1/4W	2
R169		Carbon 2.7K ohm ±10% 1/4W	1
R112		Carbon 3.3K ohm ±10% 1/4W	1
R126, 137,161, 162,167		Carbon 3.3K ohm ±10% 1/4W	5
R125,132		Carbon 3.9K ohm ±10% 1/4W	2
R117,129, 134,160		Carbon 4.7K ohm ±10% 1/4W	4
R111		Carbon 5.6K ohm ±10% 1/4W	1
R106		Carbon 6.8K ohm ±10% 1/4W	1
R154,155		Carbon 6.8K ohm ±10% 1/4W	2
R145		Carbon 8.2K ohm ±10% 1/4W	1
R110		Carbon 10K ohm ±10% 1/4W	1
R135,168		Carbon 10K ohm ±10% 1/4W	2
R128		Carbon 15K ohm ±10% 1/4W	1
R105		Carbon 18K ohm ±10% 1/4W	1
R116		Carbon 27K ohm ±10% 1/4W	1
R144,165		Carbon 33K ohm ±10% 1/4W	2
R101		Carbon 120K ohm ±10% 1/4W	1
R102		Carbon 1M ohm ±10% 1/4W	1
R143		Carbon 820 ohm ±10% 1/4W	1

Notes: 1. Parts orders must contain Model Number, Part Number and Description.
2. Unless otherwise noted, component parts indicated by parentheses in the column Q'ty are not available.
3. Ordering quantity of screws and/or resistors must be multiple of 10 pcs.

RF. IF. MPX. P.C.B. BOTTOM VIEW



RF. IF. MPX. P.C.B. TOP VIEW



CLASSIFICATION	IC101	IC102	Q101	Q102	Q103	Q104	Q105	Q106	Q107	Q108	Q109 , Q110	D101 ~ D109	D110
	LA1201	LA3300	2SK41	2SC668	2SC930	2SC930	2SC536	2SC929	2SC930	2SC930	2SC537	1S188 FM	DS-442
RANK			F	D , E	D , E	D	D , E	D , E	D , E	D	D , E		

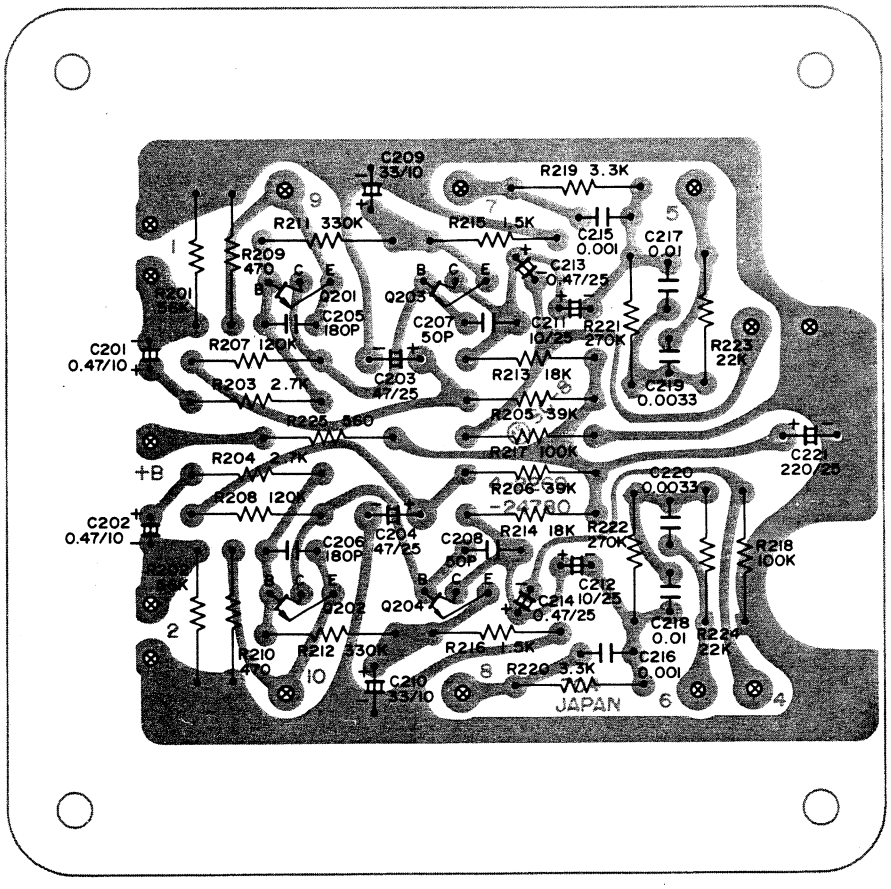
PARTS LIST

Key No.	Part No.	Description		Q'ty
EQUALIZER P.C.B. ASSY				
112	131 0 4001 39001	Equalizer P.C.B. assy		1
		CAPACITORS		
C207,208		Ceramic 50PF	±10% 50V	2
C205,206		Ceramic 180PF	±10% 50V	2
C215,216		Ceramic 0.001μF	±10% 50V	2
C219,220		Mylar 0.0033μF	±10% 50V	2
C217,218		Mylar 0.01μF	±10% 50V	2
C211,212		Electrolytic 10μF	25V	2
C209,210		Electrolytic 33μF	10V	2
C203,204		Electrolytic 47μF	25V	2
C221		Electrolytic 220μF	25V	1
C201,202		Alsicon 0.47μF	±20% 10V	2
C213,214		Alsicon 0.47μF	±20% 25V	2

Key No.	Part No.	Description		Q'ty
EQUALIZER P.C.B. ASSY				
		RESISTORS		
R209,210		Carbon 470 ohm	±10% 1/4W	2
R225		Carbon 560 ohm	±10% 1/4W	1
R215,216		Carbon 1.5K ohm	±10% 1/4W	2
R203,204		Carbon 2.7K ohm	±10% 1/4W	2
R219,220		Carbon 3.3K ohm	±10% 1/4W	2
R213,214		Carbon 18K ohm	±10% 1/4W	2
R223,224		Carbon 22K ohm	±5% 1/4W	2
R205,206		Carbon 39K ohm	±10% 1/4W	2
R201,202		Carbon 56K ohm	±10% 1/4W	2
R217,218		Carbon 100K ohm	±10% 1/4W	2
R207,208		Carbon 120K ohm	±10% 1/4W	2
R221,222		Carbon 270K ohm	±5% 1/4W	2
R211,212		Carbon 330K ohm	±10% 1/4W	2
		SEMICONDUCTORS		
Q201,202, 203,204	203 5 5100 69369	Transistor 2SC 693 (F-L) or 2SC 1312 (F)		4

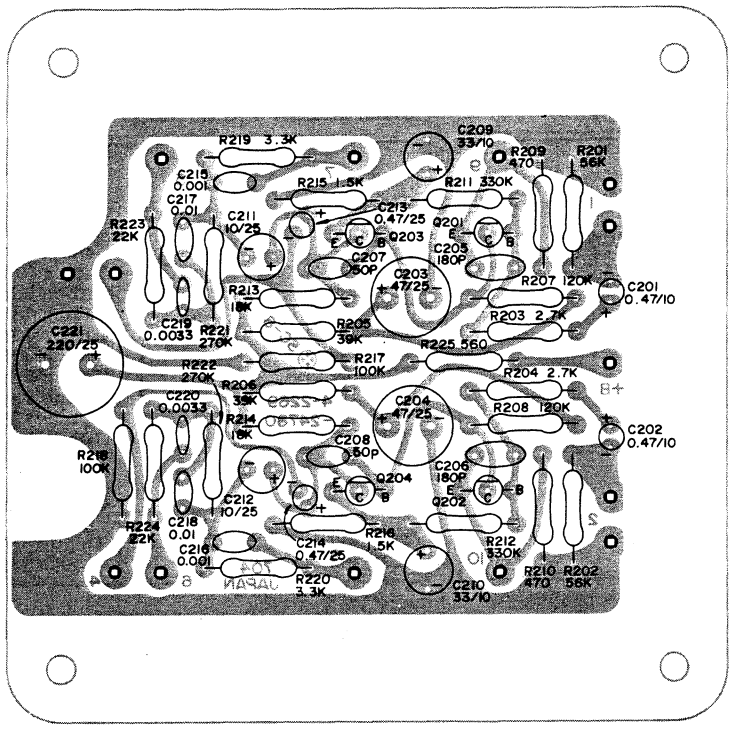
NOTES: 1. Part orders must contain Model Number, Part Number and Description.
2. Unless otherwise noted, component parts indicated by parentheses in the column Q'ty are not available.
3. Ordering quentity of screws and/or resistors must be multiple of 10 pcs.

EQUALIZER P.C.B. BOTTOM VIEW



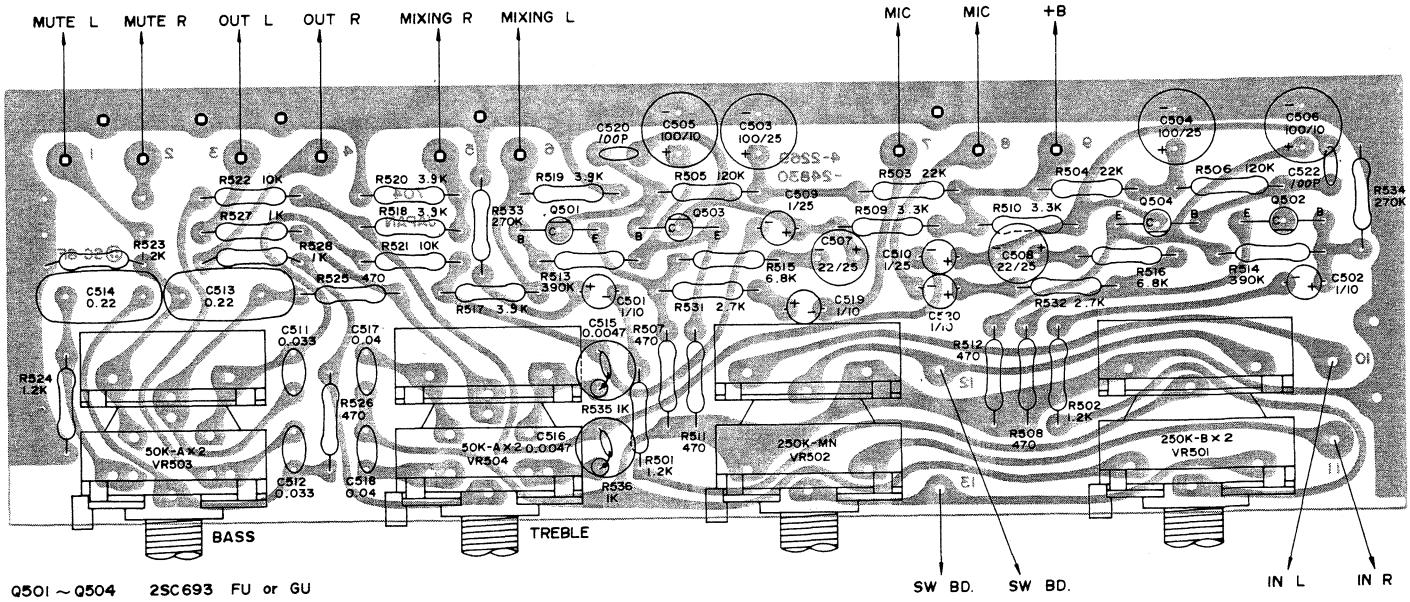
Q201 ~ Q204 2SC693 FL or 2SC1312 F

EQUALIZER P.C.B. TOP VIEW



Q201 ~ Q204 2SC693 FL or 2SC1312 F

PRE. AMP. P.C.B. TOP VIEW



Q501 ~ Q504 2SC693 FU or GU

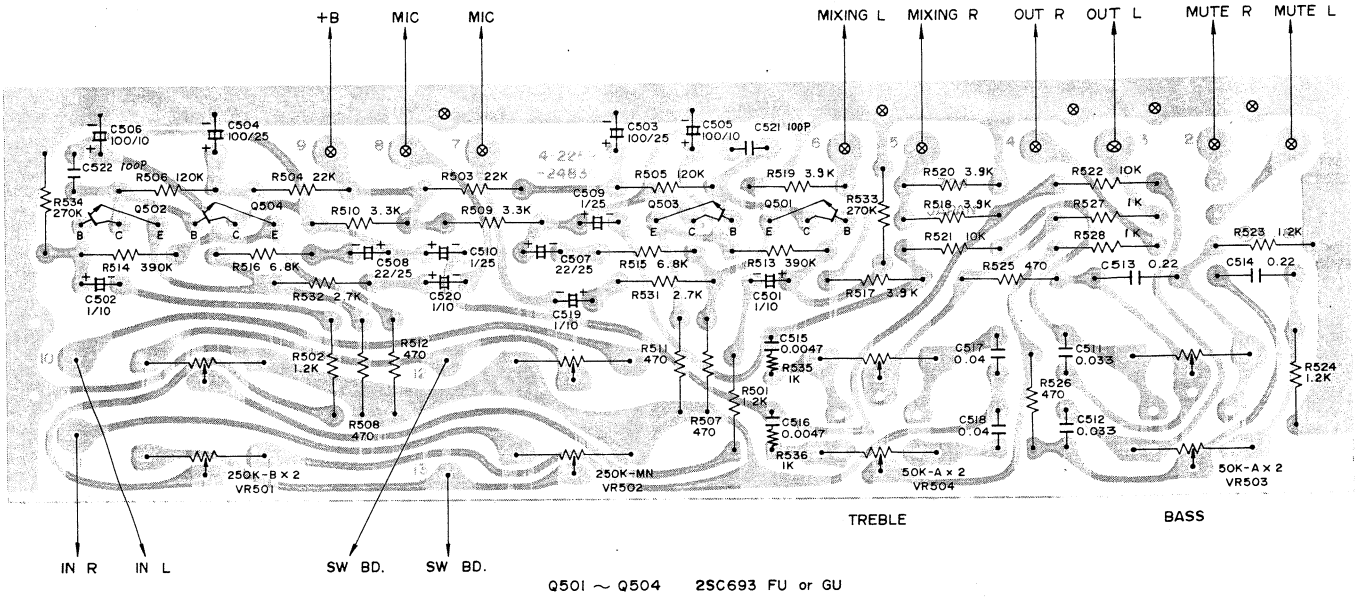
PARTS LIST

Key No.	Part No.	Description		Q'ty
PRE AMP. P.C.B. ASSY				
113	131 0 4001 39203	Pre Amp P.C.B. assy		1
VR501	4 2229 23460	VR 250K-B, Volume		1
VR502	4 2229 23470	VR 250K-MV, Balance		1
VR503,504	4 2229 23480	VR 50K-A x 2, Bass, Treble		2
		CAPACITORS		
C521,522		Ceramic 100PF	±10% 50V	2
C515,516		Mylar 0.0047μF	±20% 50V	2
C511,512		Mylar 0.033μF	±20% 50V	2
C517,518		Mylar 0.04μF	±20% 50V	2
C513,514		Mylar 0.22μF	±20% 50V	2
C519,520		Electrolytic 1μF	10V	2
C509,510		Electrolytic 1μF	25V	2
C507,508		Electrolytic 22μF	25V	2
C505,506		Electrolytic 100μF	10V	2
C503,504		Electrolytic 100μF	25V	2
C501,502		Alsicon 1μF	±20% 10V	2

Key No.	Part No.	Description		Q'ty
PRE AMP. P.C.B. ASSY				
		RESISTORS		
R535,536		Carbon 1K ohm	±10% 1/4W	2
R507,508, 511,512, 525,526		Carbon 470 ohm	±10% 1/4W	6
R527,528		Carbon 1K ohm	±10% 1/4W	2
R501,502, 523,524		Carbon 1.2K ohm	±10% 1/4W	4
R531,532		Carbon 2.7K ohm	±10% 1/4W	2
R517,518, 519,520,		Carbon 3.9K ohm	±10% 1/4W	6
R509,510		Carbon 3.3K ohm	±10% 1/4W	2
R515,516		Carbon 6.8K ohm	±10% 1/4W	2
R521,522		Carbon 10K ohm	±10% 1/4W	2
R503,504		Carbon 22K ohm	±10% 1/4W	2
R505,506		Carbon 120K ohm	±10% 1/4W	2
R533,534		Carbon 270K ohm	±10% 1/4W	2
R513,514		Carbon 390K ohm	±10% 1/4W	2
		SEMICONDUCTORS		
Q501,502, 503,504	203 5 5100 69362	Transistor 2SC 693 (FU) or (GU)		4

Notes: 1. Parts orders must contain Model Number, Part Number and Description.
2. Unless otherwise noted, component parts indicated by parentheses in the column Q'ty are not available.
3. Ordering quantity of screws and/or resistors must be multiple of 10 pcs.

PRE AMP P.C.B. BOTTOM VIEW



Q501 ~ Q504 2SC693 FU or GU

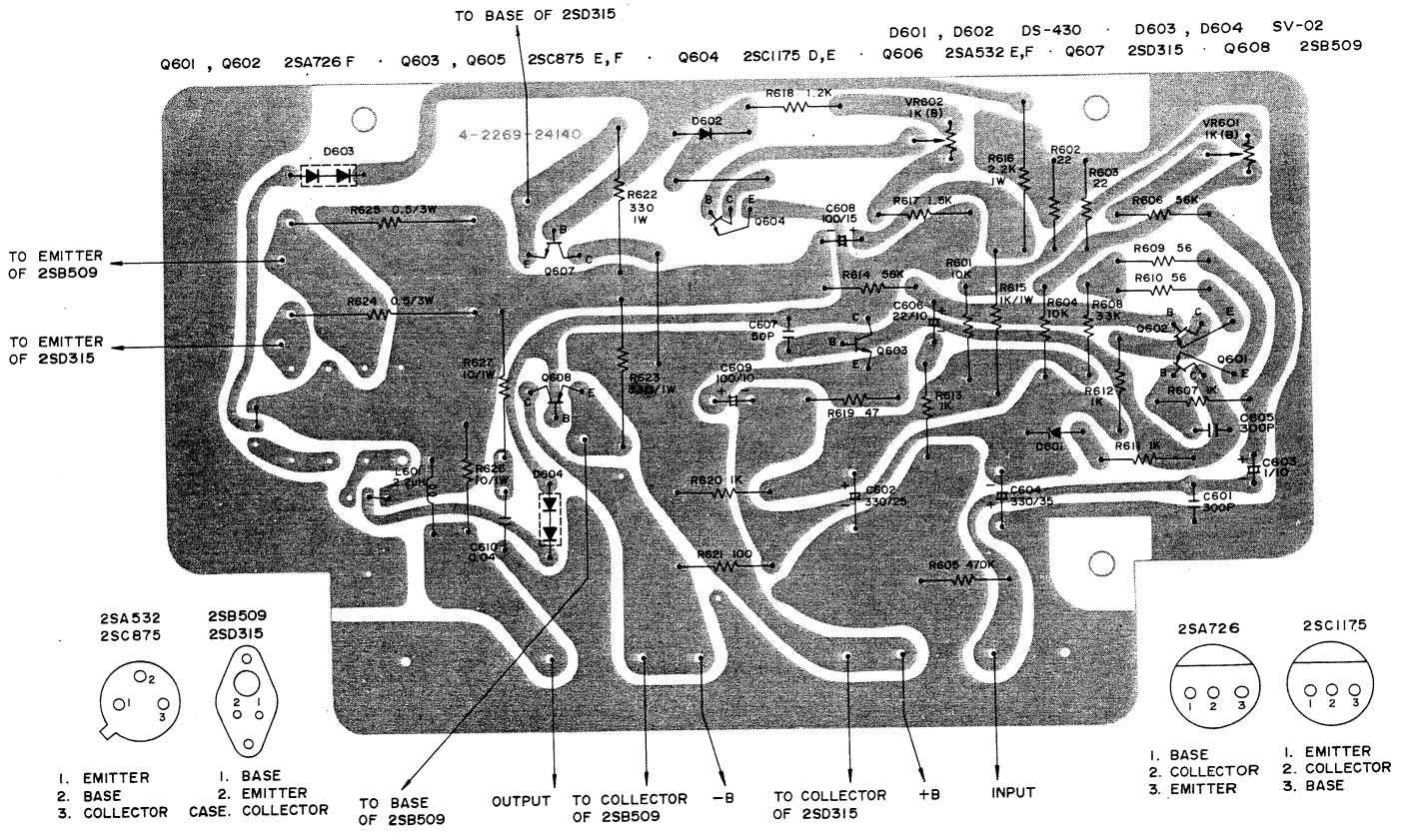
PARTS LIST

Key No.	Part No.	Description	Q'ty
MAIN AMP P.C.B. ASSY			
111	131 0 4001 40500	Main Amp P.C.B. assy	2
VR601,602	4 2229 22910	Potensiometer B-1K	2
L601	4 2539 20160	Choke coil	1
	131 2 3614 13400	Mount, P.C.B.	2
	131 2 3701 12900	Mount, Electric Parts	1
	131 2 3701 13000	Mount, Electric Parts	1
	131 2 6201 19300	Plate, Heat sink	1
		Screw, Pan Hd. tapping 3 x 6	9
	131 2 6108 11201	Cover, Sever	4
		CAPACITORS	
C607		Ceramic 50PF ±10% 50V	1
C601,605		Ceramic 300PF ±10% 50V	2
C610		Mylar 0.04μF ±20% 50V	1
C606		Electrolytic 22μF 10V	1
C609		Electrolytic 100μF 10V	1
C608		Electrolytic 100μF 15V	1
C602		Electrolytic 330μF 25V	1
C604		Electrolytic 330μF 35V	1
C603		Alsicon 1μF ±20% 10V	1
		RESISTORS	
R602,603		Carbon 22 ohm ±10% 1/4W	1
R619		Carbon 47 ohm ±10% 1/4W	1
R609,610 603		Carbon 56 ohm ±10% 1/4W	3
R621		Carbon 100 ohm ±10% 1/4W	1

Key. No.	Part No.	Description	Q'ty
MAIN AMP P.C.B ASSY			
R607,611, 612,613, 620		Carbon 1K ohm ±10% 1/4W	5
R615		Carbon 1K ohm ±10% 1/4W	1
R618		Carbon 1.2K ohm ±10% 1/4W	1
R617		Carbon 1.5K ohm ±10% 1/4W	1
R616		Carbon 2.2K ohm ±10% 1/4W	1
R601,604		Carbon 10K ohm ±10% 1/4W	2
R608		Carbon 33K ohm ±10% 1/4W	1
R606,614		Carbon 56K ohm ±10% 1/4W	2
R605		Carbon 470K ohm ±10% 1/4W	1
R624,625		Semen 0.5 ohm ±10% 3W	2
R626,627		Oxside metal film 10 ohm ±10% 1W	2
R622,623		Oxside metal film 330 ohm ±10% 1W	2
		SEMICONDUCTORS	
Q601,602		Transistor 2SA 726	2
Q603,605	203 5 4600 87550	Transistor 2SC 875 (E)	2
Q603,605	203 5 4600 87560	Transistor 2SC 875 (F)	2
Q608	203 5 6450 50940	Transistor 2SB 509 (D) or (E)	1
Q604	203 5 6701 17540	Transistor 2SC 1175 (D) or (E)	1
Q606	203 5 7100 53250	Transistor 2SA 532 (E) or (F)	1
Q607	203 5 8410 31540	Transistor 2SD 315 (D) or (E)	1
D601,602	205 5 9020 43011	Diode DS 430	2
D603,604		Diode SV-02	2

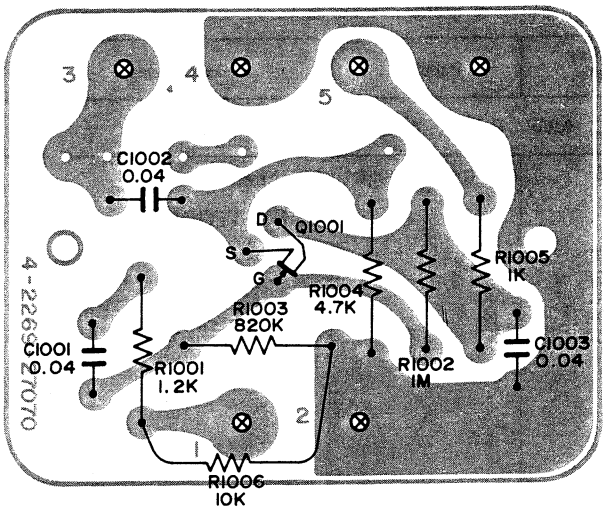
Notes: 1. Parts orders must contain Model Number, Part Number and Description.
2. Unless otherwise noted, component parts indicated by parentheses in the column Q'ty are not available.
3. Ordering quantity of screws and/or resistors must be multiple of 10 pcs.

MAIN AMP. P.C.B. BOTTOM VIEW


TO BASE OF 2SD315
Q601 , Q602 2SA726 F · Q603 , Q605 2SC875 E,F · Q604 2SC1175 D,E · Q606 2SA532 E,F · Q607 2SD315 · Q608 2SB509
D601 , D602 DS-430 · D603 , D604 SV-02
4-2269-24140
TO EMITTER OF 2SB509
TO EMITTER OF 2SD315
2SA532 2SC875
2SB509 2SD315
2SA726
2SC1175
1. EMITTER 2. BASE 3. COLLECTOR
1. BASE 2. EMITTER CASE. COLLECTOR
1. BASE 2. COLLECTOR 3. EMITTER
1. EMITTER 2. COLLECTOR 3. BASE
TO BASE OF 2SB509
OUTPUT
TO COLLECTOR OF 2SB509
-B
TO COLLECTOR OF 2SD315
+B
INPUT

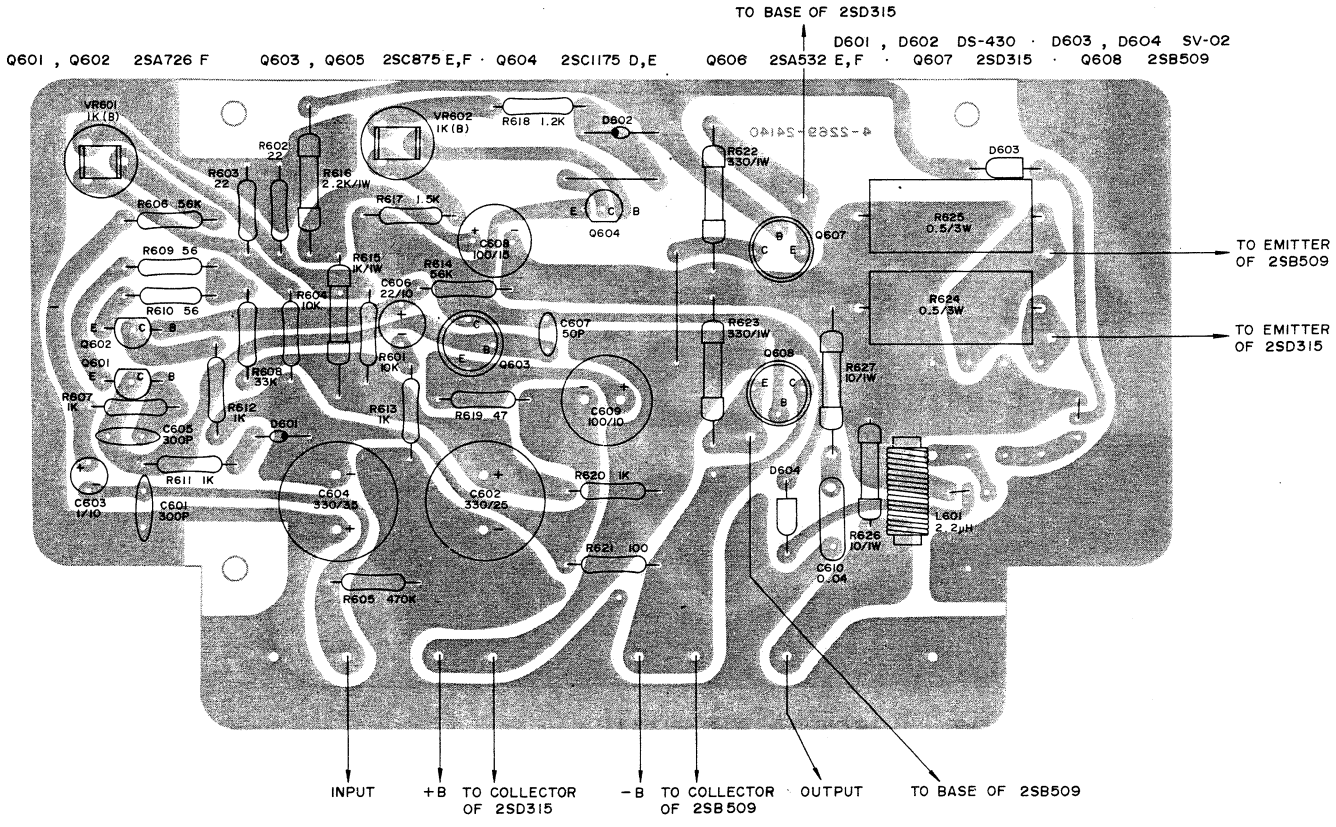
PARTS LIST

Key No.	Part No.	Description	Q'ty
PRE AMP. P.C.B. ASSY			
	131 0 4001 63300	RF AMP PCB assy	1
		CAPACITORS	
C1001 1002 1003		Ceramic 0.04μF 50V+80-20%	3
		RESISTORS	
R1005		Carbon 1K ohm 1/4W ±10%	1
R1001		Carbon 1.2K ohm 1/4W ±10%	1
R1004		Carbon 4.7K ohm 1/4W ±10%	1
R1006		Carbon 10K ohm 1/4W ±10%	1
R1003		Carbon 820K ohm 1/4W ±10%	1
R1002		Carbon 1M ohm 1/4W ±10%	1
		SEMICONDUCTORY	
Q1001	203 5 6500 04160	Transistor 2SK 41 F	1



Q1001 2SK41

MAIN AMP. P.C.B. TOP VIEW



PARTS LIST

Key No.	Part No.	Description	Q'ty
MIC AMP. P.C.B. ASSY			
116	131 0 4001 39501	Mic Amp P.C.B. assy	1
		CAPACITORS	
C403		Ceramic 30PF ±10% 50V	1
C407		Ceramic 300PF ±10% 50V	1
C401		Mylar 0.022μF ±20% 50V	1
C406		Electrolytic 4.7μF 25V	1
C404		Electrolytic 33μF 10V	1

Key No.	Part No.	Description	Q'ty
MIC AMP. P.C.B. ASSY			
		RESISTORS	
R405		Carbon 270 ohm ±10% 1/4W	1
R409		Carbon 470 ohm ±10% 1/4W	1
R402		Carbon 2.2K ohm ±10% 1/4W	1
R407		Carbon 3.3K ohm ±10% 1/4W	1
R410		Carbon 47K ohm ±10% 1/4W	1
R401		Carbon 100K ohm ±10% 1/4W	1
R404		Carbon 120K ohm ±10% 1/4W	1
R403		Carbon 270K ohm ±10% 1/4W	1
R406		Carbon 330K ohm ±10% 1/4W	1
		SEMICONDUCTORS	
Q401,402	203 5 5100 69362	Transistor 2SC 693 (FU) or (GU)	2

Notes: 1. Parts orders must contain Model Number, Part Number and Description.
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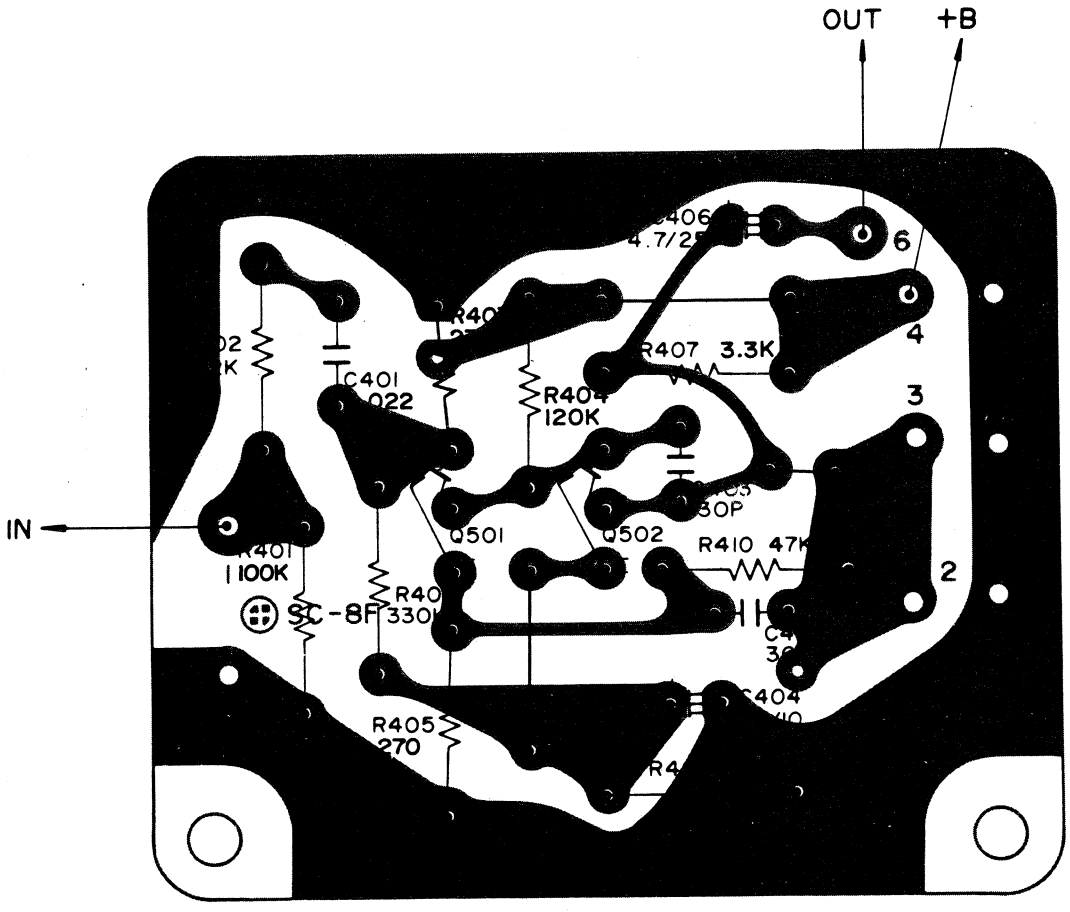
3. Ordering quantity of screws and/or resistors must be multiple of 10 pcs.

MIC AMP. P.C.B. BOTTOM VIEW



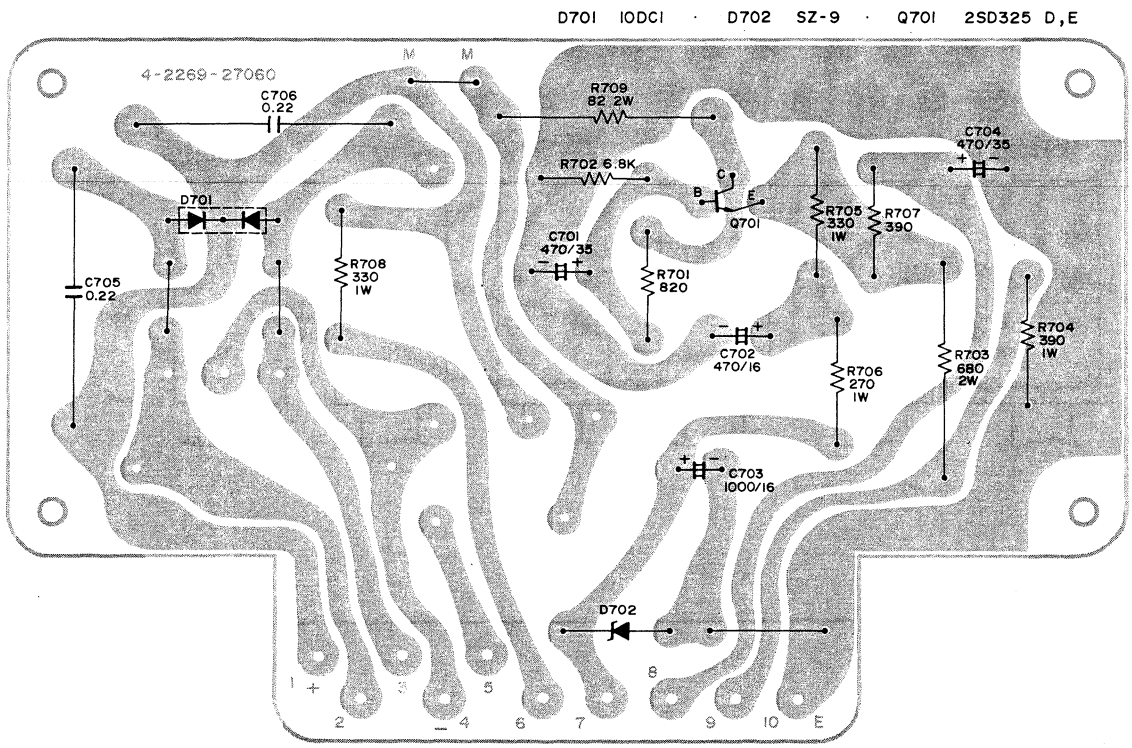
Q501 , Q502 2SC693 FU or GU

PARTS LIST

Key No.	Part No.	Description	Q'ty
POWER SUPPLY P.C.B. ASSY			
114	131 0 4001 63201	Power, supply P.C.B. assy	1
		CAPACITORS	
C705,706		MP 0.22μF 160V ±30%	4
707,708			
C703		Elect 470μF 16V	1
C709,702		Elect 470μF 25V	2
C701,704		Elect 470μF 35V	2
		RESISTORS	
R707		Carbon 390 ohm 1/4W ±10%	1
R702		Carbon 5.6K ohm 1/4W ±10%	1
R708		OMF 82 ohm 1W ±10%	1
R706		OMF 180 ohm 1W ±10%	1
R705		OMF 220 ohm 1W ±10%	1
R704		OMF 270 ohm 1W ±10%	1
R703		OMF 820 ohm 2W ±10%	1
R701		OMF 820 ohm 1/2W ±10%	1

Key No.	Part No.	Description	Q'ty
POWER SUPPLY P.C.B. ASSY			
		SEMICONDUCTORY	
D704,705	DCC-10DC1---0	Diode 10DC1	1
D702,703	DCC-10DC1R--2	Diode 10DC1R	1
D701	DCC-10D1----NA	Diode 10D1	1
D706	202 5 3000 00910	Diode SZ-9	1
Q701	203 5 8210 32540	Transistor 2SD 325	1

POWER SUPPLY P.C.B. BOTTOM VIEW



PARTS LIST

Key No.	Part No.	Description	Q'ty
SWITCH P.C.B. ASSY			
117	131 0 4001 60300	Switch P.C.B. assy	1
	4 2319 23140	Switch push, 6 keys	1
		CAPACITORS	
C301,302		Ceramic 250PF ±10% 50V	2
C303,304		Mylar 0.047μF ±20% 50V	2
C305,306		Mylar 0.01μF ±20% 50V	2
C307,308		Mylar 0.027μF ±20% 50V	2
		RESISTORS	
R303,304		Carbon 4.7K ohm ±10% 1/4W	2
R301,302		Carbon 10K ohm ±10% 1/4W	2

Key No.	Part No.	Description	Q'ty
PILOT (DIAL) P.C.B. ASSY			
115	131 0 4001 39300	Pilot (Dial) P.C.B. assy	1
	4 2359 20930	Fuse holder	10
	4 6129 20280	Pilot lamp	5
		RESISTORS	
R801		Carbon 6.8 ohm ±10% 1/4W	1

Notes: 1. Parts orders must contain Model Number, Part Number and Description.
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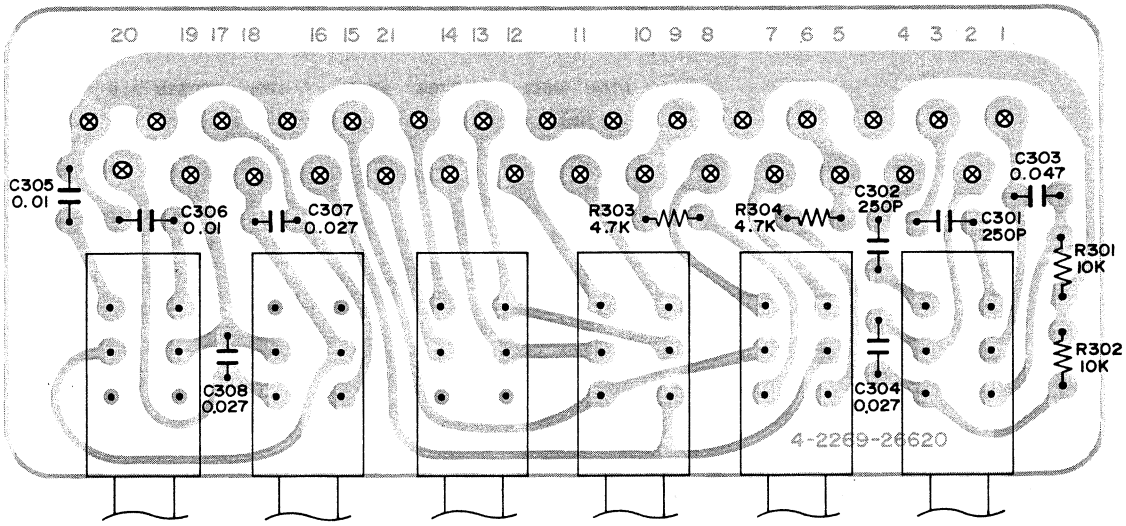
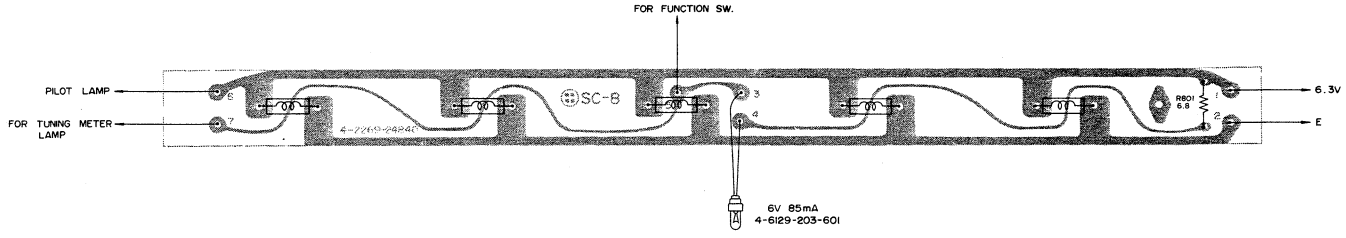
SWITCH P.C.B. BOTTOM VIEW



PILOT (DIAL) P.C.B. BOTTOM VIEW

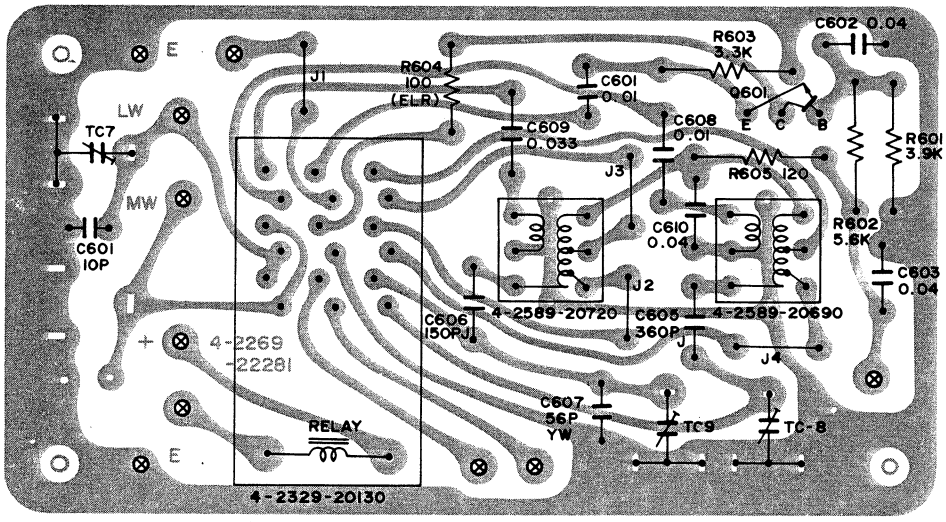


PARTS LIST

Key No.	Part No.	Description	Q'ty
AM CONVERTER PCB ASSY			
118	131 0 4001 21802	AM conv P.C.B. assy	1
	131 2 5107 00300	Mount electric part	1
	4 2249 20310	Variable capacitor, TC8	1
	4 2249 20440	Trimmer capacitor, TC7,9	2
	4 2329 20130	Relay, AM-LW converter	1
	4 2359 22070	Socket relay 20P	1
	4 2589 20690	OSC coil MW	1
	4 2589 20720	OSC coil MW	1
		CAPACITORS	
C001		Ceramic 10PF 50V ±0.25PF	1
C007		Ceramic 56PF 50V ±10%	1
C004		Mylar 0.01μF 50V ±20%	1
C009		Mylar 0.03μF 50V ±20%	1
C006		Styrol 150PF 50V ±5%	1
C005		Styrol 360PF 50V ±5%	1
C008		Ceramic 0.01μF 50V ±20%	1
C002,003 C010		Ceramic 0.04μF 50V +80%-20%	3

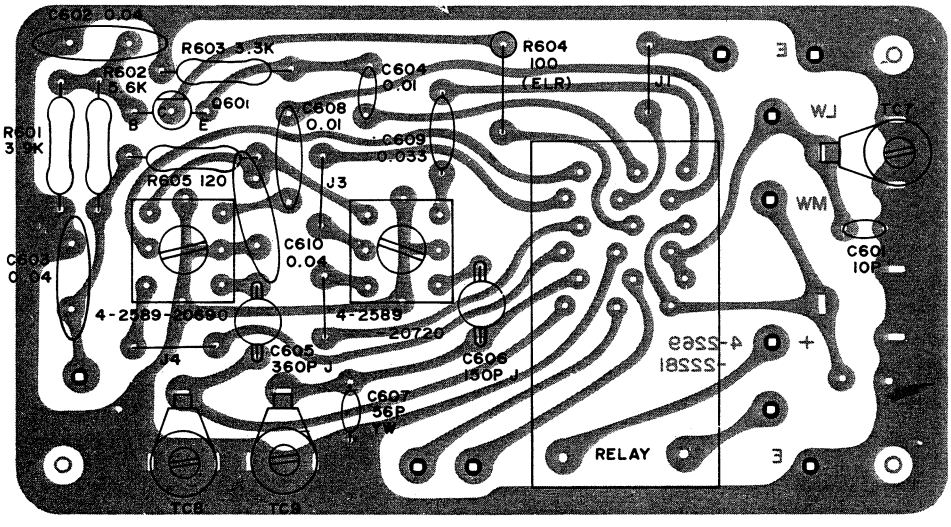
Key No.	Part No.	Description	Q'ty
AM CONVERTER PCB ASSY			
		RESISTORS	1
R004		Carbon 100 ohm 1/4W ±10%	1
R005		Carbon 120 ohm 1/4W ±10%	1
R003		Carbon 3.3K ohm 1/4W ±10%	1
R001		Carbon 3.9K ohm 1/4W ±10%	1
R002		Carbon 5.6K ohm 1/4W ±10%	1
		SEMICONDUCTORS	
Q071	203 5 5100 53640	Transistor 2SC 536	1

AM CONV. PCB BOTTOM VIEW



Q601 2SC536

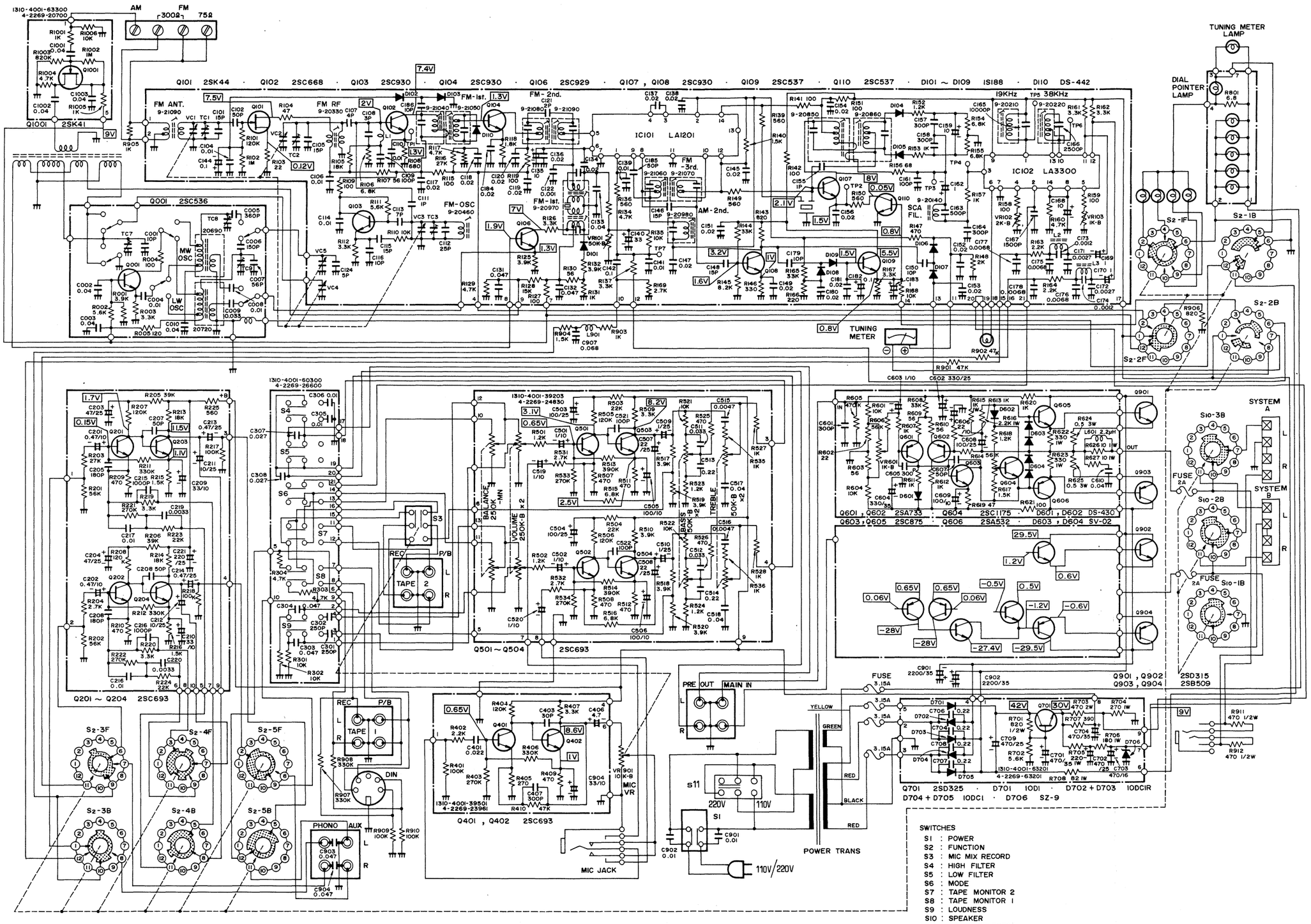
AM CONV. PCB TOP VIEW



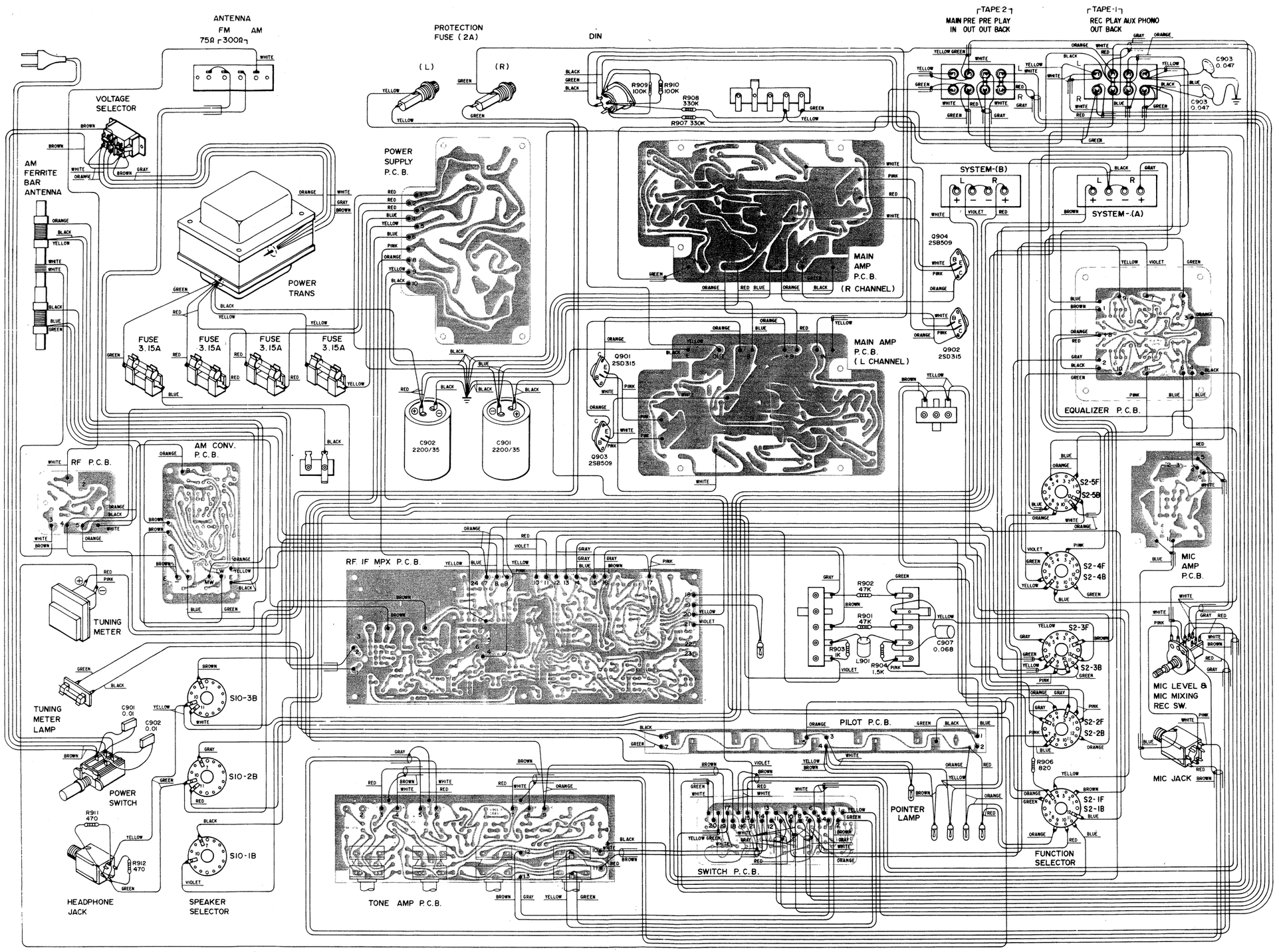
Q601 2SC536

MEMO

SCHEMATIC DIAGRAM



WIRING DIAGRAM



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WM-1170 Aug/'75/1000 Printed in Japan